Technical Information for Location Hydraulic Study

Dist. 12 Co. Orange County Rte. 74 P.M. 11.50–13.29 and 13.32–16.60
EA 0P030 Bridge No. N/A

Floodplain Description:
The project is within the San Juan Creek Watershed. The project falls within mapped Zone X (areas determined to be outside the 0.2% annual chance floodplain) and Zone D (Otherwise Protected Areas) floodplains. The applicable FEMA map numbers for the project are 06059C0460J and 06059C0500J.

1. Description of Proposal (include any physical barriers i.e. concrete barriers, soundwalls, etc. and design elements to minimize floodplain impacts)
This safety project on State Route 74 (SR-74) proposes to restore the existing shoulders to continuous 4-foot shoulders in both directions, improve the existing non-standard super elevation along the horizontal curve at the San Juan Fire Station (PM 12.30/12.50) to standard super elevation with 10-foot shoulders, install median rumble strip, upgrade and construct emergency pullouts where feasible, improve existing drainage systems to remove offsite runoff onto the pavement, overlay the existing roadway surface with Open Graded Asphalt Concrete (OGAC) throughout the project limits to address wet pavement related accidents, and upgrade all existing metal beam guard rails to the current standards. Construction of new retaining walls is also required for restoring existing 4-foot shoulder at various cut and fill locations.
This project would split the post mile limits to minimize any impacts to the existing historic bridge (San Juan Bridge, #54-64, PM 13.29/13.32). The revised post mile limits are from PM 11.50 to PM 13.29 and from PM 13.32 to PM 16.60.

2. ADT: Current 11,000 Projected 14,000

3. Hydraulic Data: Base Flood Q_{100} = 6,520 CFS
WSE_{100} = 781.8 feet
The flood of record, if greater than Q_{100}:
Q = N/A
WSE = N/A
Overtopping flood:
Q = N/A
WSE = N/A
Are NFIP maps and studies available? Yes x No ___

4. Is the highway location alternative within a regulatory floodway?
Yes ___ No x

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain.

Potential Q_{100} backwater damages:

A. Residences? Yes ___ No x
B. Other Bldgs? Yes ___ No x

C. Crops? Yes_____ No__x__

D. Natural and beneficial Floodplain values? Yes_____ No__x__

6. Type of Traffic:

A. Emergency supply or evacuation route? Yes__x__ No_____

B. Emergency vehicle access? Yes__x__ No_____

C. Practicable detour available? Yes__x__ No_____

D. School bus or mail route? Yes__x__ No _____

7. Estimated duration of traffic interruption for 100-year event hours: N/A

8. Estimated value of Q_{100} flood damages (if any) – moderate risk level.

A. Roadway $ N/A

B Property $ N/A

Total $ N/A

9. Assessment of Level of Risk

Low__x__

Moderate_____

High_____

For High Risk projects, during design phase, additional Design Study Risk Analysis May be necessary to determine design alternative.

Signature – Dist. Hydraulic Engineer (Item numbers 3, 4, 5, 7, 9) Phu Dinh Date 08/08/2017

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? No__x__ Yes_____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

Signature – Dist. Project Engineer (Item numbers 1, 2, 6, 8) Date 8/8/17

FLOODPLAIN ENCROACHMENT REPORT SUMMARY

El Modena – Irvine Channel

Dist. 12 Co. Orange County Rte. 74 P.M. 11.50–13.29 and 13.32–16.60
EA 0P030 Bridge No. N/A

Limits: 0.8 mile west of the San Juan Hot Springs Canyon (PM 11.50) and Orange County/ Riverside County Line (PM 16.60), excluding San Juan Canyon Bridge No. 55-00064 (PM 13.29)

Floodplain Description:
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		Yes	No
1.	Is the proposed action a longitudinal encroachment of the base floodplain?	___	x
2.	Are the risks associated with the implementation of the proposed action significant?	___	x
3.	Will the proposed action support probable incompatible floodplain development?	___	x
4.	Are there any significant impacts on natural and beneficial floodplain values?	___	x
5.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	___	x
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	___	x
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain.	x	___

PREPARED BY:

Phu Dinh 08/08/2017
Signature – Dist. Hydraulic Engineer Date

Isabella Duran for Smita Deshpande 8/9/2017
Signature – Dist. Environmental Branch Chief Date

8/8/17
Signature – Dist. Project Engineer Date